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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/583,154	06/16/2006	Manabu Kobayashi	128407	2556
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EXAMINER FERGUSON, CHANTIL L				
ART UNIT 1797		PAPER NUMBER		
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/583,154

Applicant(s)

KOBAYASHI ET AL.

ExaminerCHANTEL FERGUSON-
GRAHAM**Art Unit**

1797

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 June 2006.
2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) 1-19 is/are rejected.
7) ☐ Claim(s) _____ is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
10) ☒ The drawing(s) filed on 16 June 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 8/31/2006
4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date: _____
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____

DETAILED ACTION

Summary

1. This is the initial Office action based on the 10/583154 application filed June 16, 2006.
2. Claims 1-19 are pending and have been fully considered.

Priority

3. Receipt is acknowledged of papers submitted under 35 U.S.C. 11 9(a)-(d), which papers have been placed of record in the file.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 1 and all dependent claims are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.
6. Claim 1(b) states "one molecule is not more than (0.2Nc – 3.1) but not less than 1.5" It is unclear of what value applicant is claiming. Applicant is required to further bring clarification and/or correction to claims.
7. Examiner has taken the position that the value is not less than 1.5.
8. Claim 4 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

9. Claim 4 states “having a 10% distillation temperature of not lower than 360°C...” It is unclear of what applicant is referring to specifically the “10%”. Applicant is required to further bring clarification and/or correction to claims.
10. Examiner has taken the position that the 10% is meant to be use as the wt or v/v of the Fischer-Tropsch wax.

Claim Rejections - 35 USC § 102

11. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

12. Claim 1 is rejected under 35 U.S.C. 102(b) as being anticipated by ALDRICH ET AL. (US PATENT 6008164). Hereby referred to as ALDRICH.

Regarding claim 1, ALDRICH teaches lubricant base oil prepared from a hydrocarbon wax having a mixture of hydrocarbons that range from normal paraffins to highly branched paraffins (col. 3 lines 50-51). Where the mixture has a carbon chain length of about C₂₀ to about C₄₀ and a free carbon index of said branched paraffins is at least about 3 (col. 2 lines 36-46).

Claim Rejections - 35 USC § 103

13. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

14. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

15. Claims 2-3, are rejected under 35 USC 103 (a) as being obvious over ALDRICH ET AL. (US PATENT 6008164), and in view of ESTES ET AL. (US PATENT 3709817). Hereby referred to as ALDRICH and ESTES.

Claim 1 of the 102 (b) rejection above is hereby incorporated in this rejection.

Regarding claims 2-3, ALDRICH teaches lubricant base oil prepared from a hydrocarbon wax can originate from synthetic waxes from Fischer-Tropsch (col. 4 lines 9-12).

ALDRICH does not explicitly teach that a starting straight-chain hydrocarbon material having an average carbon number N_c in one molecule of not less than 25; however ESTES does.

ESTES teaches the conversion of paraffin hydrocarbons having at least six and up to about 40 carbon atoms (col. 3 lines 14-16).

At the time of the invention, it would have been obvious to one of ordinary skill in the art to modify the lubricant base oil of ALDRICH; by incorporating the paraffin hydrocarbon numbers as taught by ESTES.

The motivation would have been to provide a process that is capable of increasing the oxidative stability of hydroisomerized Fischer-Tropsch waxes while producing a lubricant as taught by ALDRICH (col. 1 lines 59-61); as well as to provide a means for

converting paraffin hydrocarbons to pre-selected products as taught by ESTES (col. 2 lines 31-33).

Therefore, the invention as a whole would have been *prima facie* obvious to one of ordinary skill in the art at the time the invention was made.

Claim Rejections - 35 USC § 103

16. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

17. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

18. Claims 4-19, are rejected under 35 USC 103 (a) as being obvious over ALDRICH ET AL. (US PATENT 6008164), and in view of WITTENBRINK ET AL. (US PATENT 6506297), and further in view of ESTES ET AL. (US PATENT 3709817). Hereby refer to as ALDRICH, WITTENBRINK and ESTES.

Claim 1 of the 102 (b), and claims 2-3 of 103 (a) rejection above is hereby incorporated in this rejection.

Regarding claims 4-19, ALDRICH does not explicitly teach the method of a Fischer-Tropsch synthetic wax having a 10% distillation temperature of not lower than 360°C to an

isomerization under a condition that a decreasing ratio of a fraction having a boiling point of not lower than 360°C is not more than 40% by weight; however WITTENBRINK does.

WITTENBRINK teaches hydrocarbon base oils useful as lubricants in engine oil and industrial compositions, and process for their manufacture. A waxy, or paraffinic feed, particularly a Fischer-Tropsch wax, is reacted over a dual function catalyst to produce hydroisomerization and hydrocracking reactions, at 700°F.+ conversion levels ranging from about 20 to 50 wt. %, sufficient to produce a crude fraction, containing 700°F.+ isoparaffins. The methyl paraffins containing crude fraction is topped via atmospheric distillation to produce a bottoms fraction having an initial boiling point between about 650°F. and 750°F. which is then solvent dewaxed, and the dewaxed oil is then fractionated under high vacuum to produce biodegradable high performance hydrocarbon base oils (abstract; EXAMPLES 1-16 and A-C with corresponding TABLES).

At the time of the invention, it would have been obvious to one of ordinary skill in the art to modify the lubricant base oil of ALDRICH; by incorporating the method of producing hydrocarbon base oils as of WITTENBRINK.

The motivation would have been to provide a process that is capable of increasing the oxidative stability of hydroisomerized Fischer-Tropsch waxes while producing a lubricant as taught by ALDRICH (col. 1 lines 59-61); as well as to provide a means for converting paraffin hydrocarbons to pre-selected products as taught by ESTES (col. 2 lines 31-33).

Therefore, the invention as a whole would have been *prima facie* obvious to one of ordinary skill in the art at the time the invention was made.

Conclusion

19. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. HAMNER (US PATENT 4832819) teaches a process for producing a lubricating oil from a Fischer-Tropsch wax containing, which process comprises: (1) separating the Fischer-Tropsch wax into (a) a low-boiling fraction and (b) a high-boiling fraction which is substantially free of water and oxygenate compounds, (2) reacting the high-boiling fraction from step (1) with hydrogen at hydroisomerization and mild hydrocracking conditions in the presence of a fluorided Group VIII metal-on-alumina catalyst to produce a C_5 + hydrocarbon product, and (3) combining the C_5 + hydrocarbon product from step (2) with the low-boiling fraction from step (1) to produce a lubricating oil (col. 2 line 60 – col. 3 line 26).

20. Any inquiry concerning this communication or earlier communications from the examiner should be directed to CHANTEL FERGUSON-GRAHAM whose telephone number is (571)270-5563. The examiner can normally be reached on M-Th 8:00-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenn Caldarola can be reached on 571-272-1444. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like

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assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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